GRANT ENVIRONMENTAL

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Via Federal Express

September 12, 1996

Ms. Verneta Simon
Illinois/Indiana Remedial Response Branch
U.S. EPA, Region 5
77 W. Jackson Blvd. (HSLR-6J)
Chicago, Illinois 60604-3590

Subject: Responses to Comments on the Scoping and Planning Documents
Lindsay Light II Site, Chicago, Illinois
Grant Correspondence Number 5022.006

Dear Ms. Simon:

Grant Environmental, Inc. (Grant) is assisting Kerr-McGee Chemical Corporation (Kerr-McGee) in revising the Scoping and Planning Documents associated with the excavation and restoration activities at the Lindsay Light II Site in Chicago, Illinois. We have enclosed responses and associated attachments to U.S. EPA comments. Responses to the comments associated with the Health and Safety Plan (Comment Nos. 66 through 77) were submitted to U.S. EPA on September 3, 1996. There have been no revisions to these responses; however, they are included in this document for completeness.

After U.S. EPA reviews and approves the revisions, Kerr-McGee will provide U.S. EPA with revised pages for the Scoping and Planning Documents and instructions for page replacement.

If you have any questions or comments, please do not hesitate to call the undersigned at 303-790-7400 or Mr. Dan White of Kerr-McGee at 405-270-3792.

Sincerely,

GRANT ENVIRONMENTAL, INC.

KimberlyLyn K. Lombardo
Project Manager

Noelle R. Cochran
Senior Engineer

Enclosures: as noted

cc: J. D. White - Kerr-McGee
D. Jedlicka - Kerr-McGee
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KERR-McGEE CHEMICAL CORPORATION RESPONSES TO U.S. EPA REGION V COMMENTS ON SCOPING AND PLANNING DOCUMENTS

FOR THE EXCAVATION AND RESTORATION PHASE AT THE LINDSAY LIGHT II SITE CHICAGO, ILLINOIS

Prepared By:
Kerr-McGee Chemical Corporation
and
Grant Environmental
September 12, 1996

KERR-MCGEE'S REVISIONS TO THE SCOPING AND PLANNING DOCUMENTS FOR THE EXCAVATION AND RESTORATION PHASE AT THE KERR-MCGEE LINDSAY LIGHT II SITE

September 12, 1996

Kerr-McGee Chemical Corporation (Kerr-McGee) received United States Environmental Protection Agency (U.S. EPA) comments on the Scoping and Planning Documents for the Lindsay Light II Site in Chicago, Illinois on August 21, 1996. This document contains responses to those comments. Some responses include revisions to text and may contain deleted text indicated by ~~strikethrough~~ text and additional text indicated with **bold** text.

REMOVAL ACTION WORK PLAN - DOCUMENT 100

1. Document 100, page 2-2--Include in the middle set of bullets an item to establish restricted access areas.

   Response: The following bullet has been added:

   - **"Establish clean/support, decontamination, and exclusion zones."**

   In addition, the first bullet was revised as follows:

   - "Information on how the Respondents have arranged with System Parking (the lessee) for the excavation and restoration **activities, including Site security and restricting access to the entire parking lot.**"

2. Document 100, page 2-3, Section 2.3--Change the duties of either the Offsites Project Manager to include being the U.S. EPA contact for project-related field activities or delegate all the duties required by the Offsites Project Manager to the Offsites Manager. Therefore, making the Offsites Manager the Project Coordinator.

   Response: The first sentence of paragraph 7 was revised to read:

   "The Offsites Manager is responsible for the ~~day-to-day management of the excavation and restoration~~ **logistics management of all Chicago area CERCLA Sites.**"

   The following sentence was added to the end of paragraph 9:

   "The Field Team Leader will be responsible for day-to-day communications with the U.S. EPA's On-Scene Coordinator."

3. Document 100, Page 2-3, para. 3--Add radiation safety or health physics staff to this list.

   Response: *The last sentence was revised to read:*

   "She will be assisted in her duties by **Mr. James Mitchell,** the U.S. EPA Quality Assurance Officer, **Mr. Larry Jensen, the Radiation Health Physicist,** U.S. EPA staff and contractor support personnel."

4. Document 100, page 2-3, para. 3--Add Larry Jensen as U.S. EPA's Health Physicist.

   Response: See Comment 3.

5. Document 100, page 2-4, Section 2.4--The utilities should be identified prior to the delineation drilling.

   Response: The delineation drilling plan is included as Appendix G (Document 107). This plan describes the implementation of the drilling program, including locating utilities prior to drilling. The following sentence was added to the end of the second paragraph on page 1-2, in Section 1.0:

   "Appendix G describes the delineation drilling plan which will be used to evaluate the extent of excavation and verify the information presented in the Report of Characterization Investigation Gamma Radiation Survey."

   The paragraph in Section 2.4 was revised to read:

   "The Work Order will ~~identify any utilities that may be involved in the excavation and restoration activities, and provide the contacts at the~~ **include a list of utilities identified during the delineation drilling program that may be involved in the excavation and restoration activities and the contacts at the associated** utility companies with whom the work must be coordinated."

6. Document 100, page 2-4, Section 2.5--Clarify whether weekend work will be also be possible should conditions warrant. If weekend work is expected, then let's agree that you will give us 24 hours notice so personnel can be available.

   Response: The following sentence was added to the end of the last paragraph in Section 2.5:

   "Should weekend work become necessary, Kerr-McGee will provide U.S. EPA 24 hours notice."

7. Document 100, page 3-1, Section 3.0--Include language to recognize that U.S. EPA is not limited to data review, U.S. EPA may take its own samples for verification.

   Response: Language was added to recognize that U.S. EPA is not limited to data review and may take its own samples for verification. The second sentence in the second paragraph was revised to read:

   "*U.S. EPA, or its designee, will inspect the property, ~~and~~ review the testing data,* **and take samples as necessary** to verify that work has been completed and meets the verification criteria."

8. Document 100, page 4-1, para. 1, sentence 2--U.S. EPA, not Kerr-McGee, will be responsible for the final determination on whether cleanup criteria have been met.

   Response: The second sentence in paragraph 1 was revised to read:

   "Kerr-McGee also will be responsible for the transport of impacted soils and debris to an approved disposal site, and for verification ~~that the Site meets the cleanup criteria.~~ **to U.S. EPA that the Site has been cleaned.**"

9. Document 100, page 4-2, Section 4.1.1.1--Access agreements were required within 14 days after the effective date of this Order or as otherwise specified in writing the OSC.

   Response: Access agreements have been obtained. Kerr-McGee was not required to notify EPA unless access could not be obtained. No text change was made.

10. Document 100, pages 4-4 & 4-5, Section 4.1.1.5--Instead of collecting the runoff in suitable containers and using it for dust control pursue obtaining permission to discharge into the sewer.

    Response: Water accumulated within the contaminated areas will not be used for dust control. Kerr-McGee is pursuing permission to discharge collected water into the sewer. Assuming permission to discharge will be granted, the first complete sentence on page 4-5 was revised to read:

    "Any water which accumulates within contaminated areas will be ~~pumped into suitable containers (55-gallon drums for small quantities and designated water trucks or vacuum trucks for larger quantities)~~ **discharged to the sewer according to the permit.**"

    The last sentence, "The water will be kept...," was deleted.

11. Document 100, page 4-4, Section 4.1.2.1--Define shallow excavation.

Response: The first sentence of the first paragraph was revised to read:

"During Site preparation work, pavement markers showing the initial estimates for the vertical and horizontal limits of excavation will be set, except for shallow excavations **of less than one foot beneath the asphalt**, where only the horizontal limits of the excavation will be marked.

12. Document 100, page 4-4, Section 4.1.2.1--State the criteria and methodology that will be used to determine if there is uncontaminated asphalt and clean overburden. Also, provide the name and location of the rail terminal.

Response: The following sentences were added to the paragraph following the bullets on page 4-5.

"...lying above the radioactive soil. **Asphalt and overburden will be tested with a gamma survey meter. If the results indicate the materials are below the criteria, samples will be analyzed by the On-Site Laboratory to determine whether they are uncontaminated.** Segregate these materials for testing..."

Information on the location of the rail terminal was added to Section 4.1.2.1. The fourth paragraph on page 4.5 was revised to read:

"...roll-off containers with small track hoes. **Rail terminals to be used for the project are the UP Global One Terminal located at 1425 S. Western Avenue, Chicago, Illinois and the Burr Oak Terminal located at 119th and Vicennes Avenue, Blue Island, Illinois.** Trucks will transport the 20-ton containers to the rail terminals where they..."

13. Document 100, page 4-7, Section 4.1.2.2--Add the statement "shoring and bracing will be according to OSHA."

Response: The third sentence in the second bullet on page 4-7 of Section 4.1.2.2 was revised to read:

"All evaluation and design of shoring and bracing will be done **according to OSHA** by qualified persons as required by the CQA Plan."

14. Document 100, page 4-11, Section 4.2.4--Consider using a modified proctor.

    Response: The Chicago Department of Transportation recommends 95% of standard proctor be used beneath paved parking surfaces. No revisions to text were made.

15. Document 100, pages 4-11 & 4-12, Section 4.2.6--Explain delineation drilling, for example, where it will occur and the equipment to be used, etc. Also, delete in this section and everywhere else in this submittal the sentences pertaining to work being dependent on you negotiating with Envirocare for winter shipments.

    Response: The Delineation Drilling Plan is included as Appendix G of the RAWP. Reference to this appendix has been added to Section 1.0 of the RAWP (see Comment 5).

    The first and second paragraphs on page 4-12 were revised to read:

    "...complete excavation of contaminated soils during 1996. The project's completion within the constraints of this schedule is dependent upon the weather factors cited below, the timely approval of the Work Plan by U.S. EPA, **and** the timely receipt of any required permits~~, and Kerr-McGee's successful negotiations with the disposal site operator for winter shipments~~.

    Kerr-McGee is generally unable to excavate in cold weather due ~~to its contract limitations with the disposal site operator,~~ the freezing of soils in the shipping containers, the unavailability of asphalt product for restoration during the winter months, and the general prospects for inclement weather that would seriously affect soil-handling operations at the Site. If ~~Kerr-McGee's request for winter shipments to the disposal site should be denied, if~~ the start of the excavation is delayed for any reason, ..."

16. Document 100, page 4-13, Section 4.4--Signs-What's on them, etc.? What's periodically checking the site?

Response: The last two paragraphs were revised to read:

"During non-operational hours, barricades, beacons, warning signs, temporary fencing, as appropriate, will be placed to prevent unauthorized entry into the work area. Signs will be placed on security barricades or exclusion zone fencing identifying certain areas as hazardous and prohibiting unauthorized entry. The warning signs will be installed at ~~30~~ **100**-foot intervals around the work area, as appropriate. **The signs will read:**

This Parking Lot is Undergoing Environmental Remediation in Cooperation with the United States Environmental Protection Agency

We Sincerely Apologize to Our Loyal Customers for this Inconvenience

For Further Information, Contact the Chicago Dock & Canal Trust at (312) 609-1800. Your Call Will Be Returned During Regular Business Hours, So Please Leave Your Name and Telephone Number After the Message

Contaminated equipment will be left on-site within the fenced exclusion zone. This equipment will be secured with locks.

A **24-hour** guard or security service provided by CDCT will be used during operations for access control and during non-operational hours to periodically check the area."

17. Document 100, pages 4-15 & 4-16, Section 4.5.4--Personal Protective Equipment - Level D only if the overalls are going to be washed on-site. Otherwise, modified D with tyveks or another type of disposable suit. Also, U.S. EPA policy does not allow for the use of dust masks or half-face respirators. When respiratory protection is needed, full-face respirators or higher should be used.

Response: The first paragraph of Section 4.5.4 was revised to read:

"Level D PPE for the Site includes coveralls, hard hat, steel-toed work shoes or boots, work gloves and safety glasses. **After use, coveralls will be packaged and shipped to a licensed commercial laundry for cleaning.** If monitoring so indicates, PPE requirements will be upgraded to ~~include dust masks or half-face~~ **full-face** respirators."

18. Document 100, page 4-17, Section 4.6.1.3--An air background site in West Chicago probably will have limited relationship to the air quality in downtown Chicago. Downtown Chicago is heavily paved. Wind direction is likely to be influenced by nearby Lake Michigan and the many skyscrapers. Air quality will be more influenced by automobiles. Any air background site should be in the immediate vicinity of the Lindsay Light II site.

    Response: A background air location in West Chicago may have only a limited response to the air quality in downtown Chicago. However, downtown Chicago wind directions will be heavily influenced by Lake Michigan and the numerous skyscrapers. Additionally, representative downtown Chicago background air locations are essentially unavailable. Therefore, background air samples will not be collected. No revisions to text were made.

19. Document 100, page 4-17, Section 4.7, paras 1 and 2--U.S. EPA and Kerr-McGee have not discussed the issue of a limited dose for ALARA, have not set a limited dose and have not agreed that Kerr-McGee will use this policy in implementing excavation activities. U.S. EPA's admonition on ALARA was intended to encourage a better cleanup where possible. Calculating doses for separate actions could considerably, and adversely, impact the schedule. The last sentence in paragraph 1 and the first sentence in paragraph 2 should be removed.

    Response: As requested, the sentences were deleted.

20. Document 100, page 4-19--The length of time for the delineation should be reduced from 6 weeks. Also, your project schedule does not include the development or approval of the Work Order.

    Response: A revised Estimated Project Schedule was prepared to clarify the delineation drilling initially will occur in the south-central portion of the Site at the location of the Lindsay operation. This phase of the delineation drilling is expected to require 3 weeks. The first delineation drilling report and related Work Order, covering the south-central portion of the Site, will be submitted to U.S. EPA for review and approval 5 weeks from the start of delineation drilling and the final report and related Work Order(s) will be submitted 2 weeks following the completion of delineation drilling. Kerr-McGee plans to begin excavation of the south-central location 6 weeks following the start of delineation drilling. A copy of the revised Estimated Project Schedule is enclosed.

APPENDIX A - DUST CONTROL PLAN - DOCUMENT 101

21. Document 101, page 1, para. 1 last sentence--This sentence should also include a statement that corrective measures will be taken if air sampling shows limits have been exceeded.

    Response: The sentence was revised to read:

    "...visual dust is created, ~~or~~ air monitoring shows excessive particulates, **or air sampling indicates limits have been exceeded.**"

22. Document 101, page 2, para 1, second sentence--Research a suppressant in the event it may be necessary.

    Response: The paragraph was revised to read:

    "...with mechanical dust suppression. Chemical foams, such as fire fighter foam, may also be used if approved by U.S. EPA. ~~Other suppressants such as chemical foams, resins, or polymers will not be used without written authorization by the U.S. EPA.~~ If available, water will be obtained..."

23. Document 101, page 4--This list of corrective measures should also include one on modifying work activities.

    Response: A fifth bullet was added that reads:

    - **"Modify work activities."**

APPENDIX B - AIR MONITORING PLAN - DOCUMENT 102

24. Document 102, page 2, para. 1, last sentence--Use of less restrictive DAC's requires U.S. EPA concurrence. Kerr-McGee cannot make this judgment on their own.

    Response: The sentence was revised to read:

    "The effluent concentration of Derived Air Concentrations (DAC) corresponding to the most restrictive lung solubility class will be used. ~~, unless other documentation exists that will justify the use of less restrictive values.~~"

25. Document 102, page 2, para. 3, item 2--The regulatory requirements apply to air quality not "monitoring" air quality.

    Response: The word "monitoring" was deleted from item 2.

26. Document 102, page 4--Change the number of air monitoring stations to four. Also, erect a wind sock on-site.

    Response: *The paragraph was revised to read:*

    "**Four** air monitoring **stations** will be established at the Site before the excavation begins. ~~Air samplers collect ambient air particulates on filters for subsequent counting.~~ Air monitoring locations ~~generally~~ will be located ~~downwind from~~ **near the center of each quarter of** the Site. ~~Two air monitoring stations will be used at the Site.~~ Air samplers **will be used to** collect ambient air particulates on filters for subsequent counting."

27. Document 102, page 6--Table 1 could be improved by putting Ac-228 and Pa-234m in sequence for the uranium and thorium series.

    Also, the table would be more complete by adding Pa-231, Ac-227, and Th-227.

    Response: Ac-228, Pa-234m, Pa-231, AC-227, and Th-227 were added to Table 1.

APPENDIX C - PERMITTING & ACCESS REQUIREMENTS PLAN - DOCUMENT 103

28. Document 103, page 5--The first entry in Table 1 under Estimated Time Frame to Acquire Permit of Consent should not be November 1994.

    Response: November 1994 was changed to September 1996.

APPENDIX F - VERIFICATION SAMPLING PLAN - DOCUMENT 104

29. Document 106--Rewrite according to Enclosure 1.

    Response: U.S. EPA and Kerr-McGee will collect and split approximately 20 samples obtained from Site cores. The samples will be analyzed by Kerr-McGee at the On-Site Laboratory and by U.S. EPA at the Argonne National Laboratory. The results from the two laboratories will be compared. If the comparison is favorable, U.S. EPA will accept Kerr-McGee's On-Site Laboratory results for verification pending U.S. EPA's review of the QA/QC data.

30. Document 106, page 2, Section 2.1, first sentence--Add to this sentence that areas outside of the ones identified in the Characterization Investigation Gamma Radiation Survey, pre-excavation delineation sampling will also be included in the verification sampling survey.

Response: A sentence was added to the first paragraph and was revised to read:

"...on delineation sampling. These data will be used to plan the excavation. **Results from the Delineation Drilling Program for uncontaminated borings and uncontaminated regions of the bottom of borings will also be included in the Verification Sampling Survey report."**

31. Document 106, page 3, last para.--There will be only one background value. Background will not vary depending upon "the particular area being surveyed."

Response: The last paragraph was deleted.

32. Document 106, page 4, last sentence--The referenced gamma procedure does not deal with decontamination. Check the referral.

Response: The sentence was revised to read:

"Personnel and sampling equipment decontamination are described in the ~~Gamma Radiological Survey Standards Operating Procedures included as Appendix C~~ Decontamination Procedure included as SOP LLII347 of Appendix C.

QUALITY ASSURANCE PROJECT PLAN - DOCUMENT 200

33. Document 200, cover page--Change U.S. EPA Remedial Project Manager to U.S. EPA On-Scene Coordinator.

Response: The text was revised accordingly.

34. Document 200, page iii--Change Gantt to Grant.

Response: Test was revised to read "Estimated Project Schedule."

35. Document 200, page 1-10, Table 1-1--Clarify whether off-hours air samples will be collected.

Response: Notation (a) on the table was revised to read:

"(a) A minimum of ~~two~~ **four** samples collected from ~~two~~ **four** separate sampling locations per 8-hour **work** period (one day of operation) per work area. **Kerr-McGee may elect to collect samples over 24-hour periods if improved detection limits are desired.** Filters will be changed daily."

36. Document 200, page 1-11, Table 1-2--Clarify whether the laboratory used for the analysis of backfill samples is at the REF or an on-site mobile laboratory. Also, include radiological screening as an additional data use for laboratory gamma spectroscopy.

    Response: Text was added to the table to clarify that the REF Laboratory will be used for analysis of offsite backfill and the On-Site Laboratory will be used for analysis of on-site backfill. In addition, verification, delineation drilling, and radiological screening were added to the data uses for gamma spectroscopy. A copy of the revised Table 1-2 is enclosed.

37. Document 200, page 3-4, Table 3-1--Table 3-5 presents MDA for air sample counting via gamma spectroscopy. Table 3-1 indicates that air samples will be counted using gross alpha methods and does not identify gamma spectroscopy as an analytical method. Add to Table 3-1 that you will be using gamma spectroscopy as an analytical method.

    Response: Table 3-1 was modified and a revised copy is enclosed.

38. Document 200, page 3-7, Table 3-4--Clarify how each air sample type will be used. The stated objectives for air sampling are to collect two samples from two separate sampling locations per day using a high volume air sampler. The SAIC 80A, 60A and Eberline RAS-1 air samplers are low volume air samplers. Only the Graseby GMW-2000 is a high volume air sampler.

    The ACL and the DAC concentrations provided appear to be Kerr-McGee derivations. Justify why the concentration limits provided in 10 CFR 20 are not cited.

    Provide or reference the alpha MDA equations.

    Response: Table 3-4 was modified and a revised copy is enclosed.

39. Document 200, page 3-8, Table 3-5--Identify how often air filter samples will be counted by gamma spectroscopy. Also, delete enriched uranium reference. This may mislead the reader to believe that enriched uranium may be present.

    Response: Table 3-5 was modified and a revised copy is enclosed.

40. Document 200, page 1-4, Backfill bullet--For the purposes of this bullet, the backfill must be less the 3.7 picoCuries per gram total radium. There is no need to make further background measurements for backfill. Also, the backfill needs to be evaluated for pertinent characteristics of 40 CFR 261.

Response: The bullet was revised to read:

"...the radiological composition of the backfill material must be ~~within statistical ranges for the Site as established by the Respondents during the sampling of background samples from four locations taken on the property at points where gamma exposure rates are lowest and eight off-site locations in the immediate vicinity of the Site. The backfill soil types are described in the Construction Quality Assurance (CQA) Plan.~~ **less than 3.7 pCi/g total Radium. The backfill will also be evaluated for pertinent characteristics of 40 CFR 261.**"

41. Document 200, page 1-6, second bullet--Non-standard data should not be ruled out. Change the last sentence by replacing "...will generate no Level 5 data..." to "...do not expect any Level 5 data to be necessary..." Add "Should activities require Level 5 data, it will be collected."

Response: The text was revised to read;

"...similar to DQO Level 4 data. The Respondents ~~will generate no Level 5 data~~ **do not expect any Level 5 data to be necessary** during excavation and restoration activities. **Should activities require Level 5 data, it will be collected.**"

42. Document 200, page 1-11--It is assumed that gamma spectroscopy will be used for more than backfill confirmation. All major uses should be listed.

Response: Table 1-2 was modified and a revised copy is enclosed.

43. Document 200, page 2-1, Section 2--This section should include U.S. EPA's health physicist. Also, please make the changes regarding the duties of the Offsites Project Manager and Offsites Manager mentioned in Comment 2.

Response: The following sentence was added to the of Section 2.1:

"The U.S. EPA Health Physicist is Mr. Larry Jensen."

Section 2.2 was revised to read:

"The Kerr-McGee Offsites Project Manager **provides overall direction to Kerr-McGee's project activities and** has overall responsibility for ensuring that the project meets U.S. EPA objectives and Kerr-McGee quality standards. The Offsites Project Manager is the ~~principal~~ **administrative** point of contact between Kerr-McGee and the U.S. EPA."

Section 2.3 was revised to read:

"The Offsites Manager is responsible for ~~implementing the project,~~ the **logistics management of all Chicago area CERCLA Sites. He** ~~and~~ *has the authority to* commit the resources necessary to meet project objectives and requirements within established budgets and schedules. The Offsites Manager may not be..."

Section 2.4 was revised to read:

"The Offsites Manager will be supported by the Field Team Leader. The Field Team Leader is responsible for **day-to-day communications with the U.S. EPA's On-Scene Coordinator and** leading and coordinating the day-to-day activities of the *various technical staff under his supervision. They will perform construction...*"

44. Document 200, page 2-4--This figure should include U.S. EPA's health physicist and names of personnel in the blank boxes, for example, technical staff.

    Response: The figure has been revised to include a box for the U.S. EPA's Health Physicists and names of personnel in the blank boxes. The revised figure is enclosed.

45. Document 200, page 3-2, para. 1--Typo the term should be "Regulatory Guide" not "reference guideline."

    Response: The typographical error was corrected.

46. Document 200, page 3-7--The Alternate Concentration Limit should be defined and the value 2.49E-14 μCi/ml referenced or explained.

    The Derived Air Concentration of 4.4E-12 μCi/ml appears to be derived since it does not correspond to the 10 CFR 20 value and is given to two significant figures. This value should be referenced or explained.

    It is not clear from the information on this page which limits apply to the general public and which apply to workers. Clarifying language should be added.

    Response: Table 3-4 was modified and a revised copy is enclosed.

47. Document 200, page 3-8, *Footnote--this footnote in incorrect. The contamination contains both uranium chains (U-238 and U-235).

    If it becomes necessary to measure U-235, the MDA must be sufficiently low to detect the regulatory limit.

It is unclear why the issue of enriched uranium is being introduced here. We know this is not possible considering the era of contamination. The data issue, giving an apparent presence of enriched uranium, has been resolved. Reference to enriched uranium should be dropped.

Response: Table 3-5 was modified and a revised copy is enclosed.

APPENDIX A - FIELD SAMPLING PLAN - DOCUMENT 201

48. Document 201--Comments made earlier should be incorporated in this section.

Response: A review of comments was made to evaluate which were applicable to this document. The following revisions were made.

On page 2-2, the following sentence was added to the end of the first paragraph to be consistent with Comment No. 36.

"...obtained only from confirmed uncontaminated sources. **The REF Laboratory will be used for analysis of offsite backfill and the On-Site Laboratory will be used for analysis of on-site backfill.**"

The last paragraph in Section 2.2.1 on page 2-3 was modified in response to Comment No. 26. The text was revised to read:

""**Four** air monitoring **stations** will be established **at the Site** before the excavation begins. ~~High-volume and low-volume air samplers collect ambient air particulates on filters for subsequent counting.~~ Air monitoring locations ~~generally~~ will be located ~~downwind from~~ **near the center of each quarter of** the Site. ~~Two air monitoring stations will be used at the Site.~~ Air samplers **will be used to** collect ambient air particulates on filters for subsequent counting."

To be consistent with Comment No. 17, the text in the first paragraph of Section 4 was revised to read:

"...transported to the approved disposal facility. **Used coveralls will be packaged and shipped to a licensed commercial laundry for cleaning.** Non-contaminated discarded items..."

For clarification, the word "soil" was added to headings on pages 2-1 and 2-3 describing backfill sampling. The headings were revised to read "Backfill **Soil** Samples" and "Backfill **Soil** Sampling."

49. Document 201, page 2-1, para. 2--This paragraph refers to background air sampling. If there is a plan to do this in the immediate vicinity of the site it should be fully described. If background sampling is to be performed in West Chicago, as stated in Document 100, then West Chicago is much too far away and much too unlike the 316 East Illinois site to be a useful location.

    Response: Background sampling will not be performed. The text was revised to read:

    "The objectives of the air sampling program described in this plan are to collect sufficient ~~background air samples and~~ air samples during soil excavation to assure *that excessive airborne contaminated dust is not being released. Air monitoring* activities..."

50. Document 201, page 2-3, para. 2--Soil samples should all be 15 centimeters deep. An arbitrary depth of 0 - 6 inches is not acceptable.

    This paragraph should state that the 5 samples to be composited should be taken at the center (1 sample) and half way between the center and each corner (4 samples).

    Response: The paragraph was revised to read:

    "The samples will be collected in accordance with the Soil Sampling Procedure (SOP-214) and the Verification Sampling Plan (Appendix F of the Work Plan). One composite ~~of five soil samples, 0 to 6 inches in depth~~ will be ~~collected and~~ analyzed *for each 100 m^2, or less, of excavated area.* **The composite will be prepared from five samples, about 15 centimeters deep (6 inches), obtained at the center (1 sample) and half way between the center and each corner (4 samples).**"

51. Document 201, page 2-4, first paragraph--Soil that is not contaminated should not be disposed of as contaminated.

    Response: The paragraph was revised to read:

    "**When practical,** potentially-clean soils ~~may~~ **will** be separated ~~at the Site~~ during excavation~~. If the volume of clean material that is required to be excavated is small, the Field Team Leader may elect to remove this material and dispose of it as contaminated material. If a sufficient volume of material is separated during excavation, the clean soil will be~~ **and** stockpiled in a clean area and protected from becoming contaminated. In this case, potentially-clean soils..."

52. Document 201, page 4-1, Section 4.1--The last step of decontamination should be removal of the respirator, unless you are going to frisk twice, before the respirator is removed and then after all PPE is removed.

Response: The bullets were re-ordered as follows:

1. Remove disposable boots and gloves and discard;
2. Remove coveralls and discard;
3. Perform personal radiation survey; and,
4. Remove respirator, if applicable;
5. Sanitize respirator, if applicable.

APPENDIX B - JOB DESCRIPTIONS - DOCUMENT 202

53. Document 202--Specific names of staff used to fill these positions should be supplied to the U.S. EPA prior to startup of the project.

Response: The names were provided to U.S. EPA in a letter dated August 27, 1996, SUBJECT: Administrative and Technical Staff Assignments. The names have been added to the document. In summary, the following personnel will be used:

Offsites Project Manager:	Mr. Dan White
Offsites Manager:	Mr. Dave Jedlicka
Field Team Leader:	Mr. Bernie Bono
Project Quality Assurance Supervisor:	Mr. Jeff Williams
Health and Safety Coordinator:	*Mr. Thom Bond*
Radiological Technician:	Mr. Al Momrick

APPENDIX C - STANDARD OPERATING PROCEDURES - DOCUMENT 203

AIR MONITORING SOP - DOCUMENT 212

54. SOP-212, page 1--No plan has been submitted for background air sampling in the vicinity of 316 East Illinois. This will be necessary if there is an intent to monitor near the site.

Response: No background air sampling will be performed (refer to Comment 18). The second paragraph of Section 2 was revised to read:

"Respondents will establish ~~background~~ environmental monitoring stations to measure background air quality in the area. ~~Information from these stations will be interpreted to be representative of area-wide background air quality.~~ **The objectives of the air sampling program described in this plan are to collect sufficient air samples during soil excavation to assure that excessive airborne contaminated dust is not being released.**"

To be consistent with Comment 26, Section 5.1 revised to read:

"5.1 Air Monitoring Locations

5.1.1 ~~Two~~ **Four** air monitoring stations will be used during excavation activities.

5.1.2 ~~High volume air samples generally will be located downwind from the excavations and at the boundary of the Site.~~ **Air monitoring locations will be located near the center of each quarter of the Site.**"

55. SOP-212, page 3, Section 5.4.3--For thoroughness, sentences should be added to describe how net counts are obtained.

Response: "Net counts" is standard radiochemical nomenclature and no definition is required. No text change was made.

SOIL SAMPLING SOP - DOCUMENT 214

56. SOP-214, Attachment 1, page 1--Drop first three paragraphs. Make the fourth paragraph read:

U.S. EPA has set the verification method in West Chicago to be that the verification composite concentration must be less than the sum of 5 pCi/g plus the background concentration. No 95% upper confidence limits are used. Because of the interrelatedness of the West Chicago sites and the 316 East Illinois site, U.S. EPA has determined to use the same method here.

Response: Attachment 1, Evaluation of Sampling Results, was deleted from SOP-214. Therefore, the text in Section 3.12 was revised to read:

"...will consult with the Offsites Manager to determine if this further evaluation is required. ~~Attachment 1, Evaluation of Sampling Results, provides the calculations necessary to determine if the sample data provides a 95 percent confidence level that μ meets the relevant criteria.~~"

RARE EARTHS FACILITY STANDARD OPERATING PROCEDURES

The Rare Earths Facility Standard Operating Procedures are used at numerous CERCLA Sites. These procedures are reviewed and revised periodically. Responses described herein will be incorporated in the next revision of the procedures.

57. Appendix C, REF SOPS, Table of Contents--SOP that addresses remediation of spilled material would be useful. If not, please develop or if it is incorporated somewhere, please state.

    Response: By law, spills during transit are the responsibility of the trucking firm (MTI) and the railroads. No text change was made.

58. Appendix C, REF SOPS, LLII100, page 3--This definition for Clean Area is not based upon soil concentration. Therefore, it will be a confusing term. Surface contamination limits don't apply to soil.

    Response: Surface contamination limits are contained in the IDNS regulations. Please refer to Comment 67.

59. Appendix C, REF SOPS LLII100, page 7, Section 5.1.3--On the Job Training cannot be the sole training method.

    Response: Kerr-McGee will use a combination of the training methods. When the procedure is revised, the text will read:

    "Training will be provided using ~~one of~~ a combination of the following methods:"

60. Appendix C, REF SOPS, LLII100, page 7, Section 5.1.7--Clarify whether it is possible for a person to fail the exams and still work in the Exclusion Zone. It appears they can.

    Response: Kerr-McGee will not allow persons who have failed the exam to work in the Exclusion Zone. When the procedure is revised, the text will read:

    "Personnel who fail to satisfactorily complete the training will not be ~~granted unescorted access to~~ **allowed to work in** the Exclusion Zone."

61. Appendix C, REF SOPS, LLII100, page 8, Section 5.3--Clarify if "Indoctrination" is the term you wish to apply to inspectors. It appears that this section should apply to Federal inspectors, not State inspectors.

    Response: The word "State" applies to all governmental regulatory personnel. Because this procedure is being used at numerous sites, Kerr-McGee does not wish to alter this procedure.

62. Appendix C, REF SOPS, LLII345, page 3, definition 3.2--Clarify where the 33 dpm/100 cm^2 was taken from or developed.

Response: *The value 33 dpm/100 cm^2 was obtained from the IDNS regulations.* Please refer to Comment 67.

63. Appendix C, REF SOPS, LLII345, page 12, table--These values appear to have been taken from Illinois Department of Nuclear Safety regulations. Except where there is no comparable guideline, Nuclear Regulatory Commission guidelines, as found in Regulatory Guide 1.86, should be used.

Response: Please refer to Comment 67.

64. Appendix C, REF SOPS, LLII345, page 15--Attachment 1 Table 1 was not located in this document. Please supply it.

Response: This is a typographical error in the procedure. When the procedure is revised, the text will read:

"From Attachment 1, ~~table 1~~ the alpha to beta ratio..."

CONSTRUCTION QUALITY ASSURANCE PLAN - DOCUMENT 300

65. Document 300, Figure 2-1--Please add Larry Jensen as U.S. EPA's Health Physicist and names of personnel in the blank boxes, for example, technical staff, etc.

Response: The figure has been revised to include a box for the U.S. EPA's Health Physicists and names of personnel in the blank boxes. Please refer to figure enclosed for Comment 44.

HEALTH AND SAFETY PLAN - DOCUMENT 400

Responses to the comments associated with the Health and Safety Plan (Comments 66 through 77) were submitted to U.S. EPA on September 3, 1996. There have been no revisions to these responses. They are provided in this document for completeness. Copies of the Draft Delineation Drilling Plan described in Comment 76 and the draft procedures described in Comment 77 were previously submitted to U.S. EPA and are NOT included in this document.

66. Document 400, page iv--Clarify if the area code for the Offsites Manager is still 708. Also, change the U.S. EPA telephone number to the Region V 24-hour #: (312) 353-2318.

Response: The area code in West Chicago has been changed to 630; therefore, the telephone number for the Offsites Manager is (630) 293-6332. The contact name was changed from U.S. EPA to U.S. EPA Region V 24-hour Emergency Number and the number was revised as above.

67. Document 400, page 4-5--Regulatory references should be to 10 CFR 20 not 32 IAC 340.

    Response: The following paragraph was added to the end of Section 1 in the Removal Action Workplan:

    "References to the Illinois Department of Nuclear Safety (IDNS) regulations exist in these documents. The IDNS regulations are usually more restrictive that US Nuclear Regulatory Commission (NRC) regulations. However, whenever there is a conflict between IDNS and NRC regulations, the NRC regulations will be used to determine compliance."

    The following footnote was added to pages 4-5 and 4-6:

    "The IDNS regulations are usually more restrictive that US Nuclear Regulatory Commission (NRC) regulations. However, if there is a conflict between IDNS and NRC regulations, the NRC regulations will be used to determine compliance."

68. Document 400, page 7-1--Regulatory references should be to 10 CFR 20 not 32 IAC 340.

    Response: See responses to comment 67.

69. Document 400, page 7-2, para. 1--The radon decay product decay times used in procedures in this document are not consistent. SOP-212 uses 5 hours. Health and Safety Plan Document 400 (on page 7-2) uses 4 hours. For consistency, U.S. EPA is setting a 5 hour decay time.

    Response: The radon decay product decay times were revised to 5 hours in the Health and Safety Plan.

70. Document 400, page 7-2, para. 1--If filters are decayed for 4 days before thoron measurements are made there could be several days delay from the time high thoron concentrations are generated and there is a recognition of this problem. Therefore, U.S. EPA is prescribing that, after filters have been collected and decayed overnight, there should be a morning count of the filter that will serve to identify high gross counts for the previous day. This will alert health & safety staff of a potential problem which they can investigate more promptly. The count, after 4 days decay, will still serve to be the official measurement of Pb-212.

Response: The following paragraph was added to the end of Section 7.2:

"After filters have been collected and decayed overnight, there will be a morning count of the filter that will serve to identify high gross counts for the previous day. This will alert health & safety staff of a potential problem which they can investigate more promptly. The count, after 4 days decay, will serve to be the official measurement of Th-Alpha."

71. Document 400, page 7-3, para. 1--Clarify what action level will be used for worker contamination that is fixed. Explain what action will be taken with these workers. Also, list the airborne contaminants expected and how often they will be monitored, monitoring equipment such as a combustible gas meter, etc.

Response: Based upon the Characterization and Investigation Report (October 27, 1995), Kerr-McGee does not anticipate encountering organic vapors that may be present at the water table. However, information pertaining the to exposure risks and monitoring for organic vapors has been added to the document.

A section on Total Organic Vapor Monitoring was added to the document as Section 7.7 (Action Levels became Section 7.8) Section 7.7 reads as follows:

7.7 Total Organic Vapor Monitoring

In addition to the radiological contaminants, there is a slight potential of encountering organic vapors. Organic vapors were encountered near the water table during previous investigation at the site. Routine screening for total organic vapors will be conducted with a photoionization detector (PID), or similar type equipment, on a daily basis. The screening will evaluate ambient photoionization volatile organic vapors and some semi-volatile organic vapors.

Total organic vapors in ambient air will be obtained periodically with a PID during daily field activities. The PID provides real-time readings of exposure to volatile organics and some semi-volatile organics. Measurements will be made daily, prior to activities, to determine background levels. Monitoring measurements will be taken when:

- operations change,
- work moves to a different portion of the Site, and
- personnel observe contaminated materials,

These screening operations will be used to identify conditions requiring an upgrade to full-face respirators as described in Section 7.8.2.

Additional information was added to Section 7.8, Actions Levels. The section was divided into two sections. The existing text was placed under a new subheading entitled Section 7.8.1, Radiological Action Levels. The following information was added under Section 7.8.2, Organic Vapor Action Levels:

7.8.1 Organic Vapors Action Levels

Kerr-McGee is taking a conservative approach to organic vapor monitoring at the Site. A PID will be used to monitor for organic vapors. Operations will be discontinued if the PID reads 5 ppm[1] or greater and the area will be evacuated. The Site Health and Safety Officer will retest the area wearing a full-face respirator. Operations will not resume until the PID reads less than 5 ppm and remains below 5 ppm.

[1] PID level obtained for benzene from NIOSH Pocket Guide to Chemicals Hazards.

72. Document 400, page 7-4--Reference or explain the origin of values such as 2 DAC-hours, 25% of the DAC, and 250 pCi/100 cm^2.

Response: References were made to explain the origin of values. A copy of the revised table (page 7-4) is enclosed.

73. Document 400, page 9-1, Evaluation--The referenced handbook is the Radiological Health Handbook.

Response: The reference was revised to read:

"Personnel Decontamination in the Radiological Health Handbook."

74. Document 400, page 13-4, Section 13.4.2--Monitoring toxic gases or dusts at 5 parts per million should be clarified since a list of possible contaminants has not been included with this document.

Response: See response to comment 71.

75. Document 400, page 13-4, Section 13.4.3--Change having air-purifying respirator available to self-contained breathing apparatus. Include a discussion on retrieval.

Response: The section was revised to read:

"Acceptable rescue procedures include entry by a team of rescuers only if the appropriate self-contained breathing apparatus (SCBA) is available; or use public emergency services.

The standby worker must trained in first aid, CPR, and respirator use. A first aid kit should be on hand and ready for emergency use. The standby worker must be trained in rescue procedures. Retrieval of an unconscious victim in a confined space will only be conducted by trained rescue personnel. An emergency call to 911 will be initiated to assist the victim."

76. Document 400--Somewhere in this document you should include a detailed site map showing clean zone/support zone, decontamination zone and exclusion zone/hot zone. Also, the following statement should be included in this document - This plan will meet the requirements of OSHA 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, 1910 and 10 CFR. In addition, there should be a place for all workers, visitors to acknowledge their reading and understanding of the health and safety plan.

Response: The following information was added to the end of Section 3:

"Work zones will be established at the site. These zones include clean/support zones, decontamination zones, and exclusion zones. Although the clean/support zones are anticipated to remain fixed, other zones will move about the site as drilling and excavation work progresses. Figure 3.1 shows the impacted areas where exclusion zones may be established during excavation activities."

A copy of the figure is enclosed.

A section entitled, "Site Control Plan for Delineation Drilling," was added to the Draft Delineation Drilling Program.

The following paragraph was added to the end of Section 1, page 1-1.

"This plan meets the requirements of OSHA 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, and applicable subparts of OSHA 29 CFR 1926, 1910 and 10 CFR. Visitors will be required to review the health and safety plan and read and sign the visitor information sheet (Figure 1.1)."

A copy of the visitor information sheet is enclosed.

77. Appendix B, Document 402--Explain why this appendix has been deleted. Explain what will be used in it's place.

Response: The appendix was replaced by the following procedures:

- Respirator Training, Selection and Use
- Respirator Protection Equipment Inspection and Maintenance
- Operation of the Model 8020 Portacount Plus for Quantitative Respirator Fit Testing

EMERGENCY CONTINGENCY PLAN - DOCUMENT 500

78. Document 500--A detailed site map showing clean zone/support zone, decontamination zone and exclusion zone/hot zone should be included. Also state travel time and distance to the hospital.

    Response: A site map showing the impacted areas where the exclusion zones may be established during excavation activities was included in the Health and Safety Plan. See Comment 76.

    The second paragraph of Section 2.2 was revised to read:

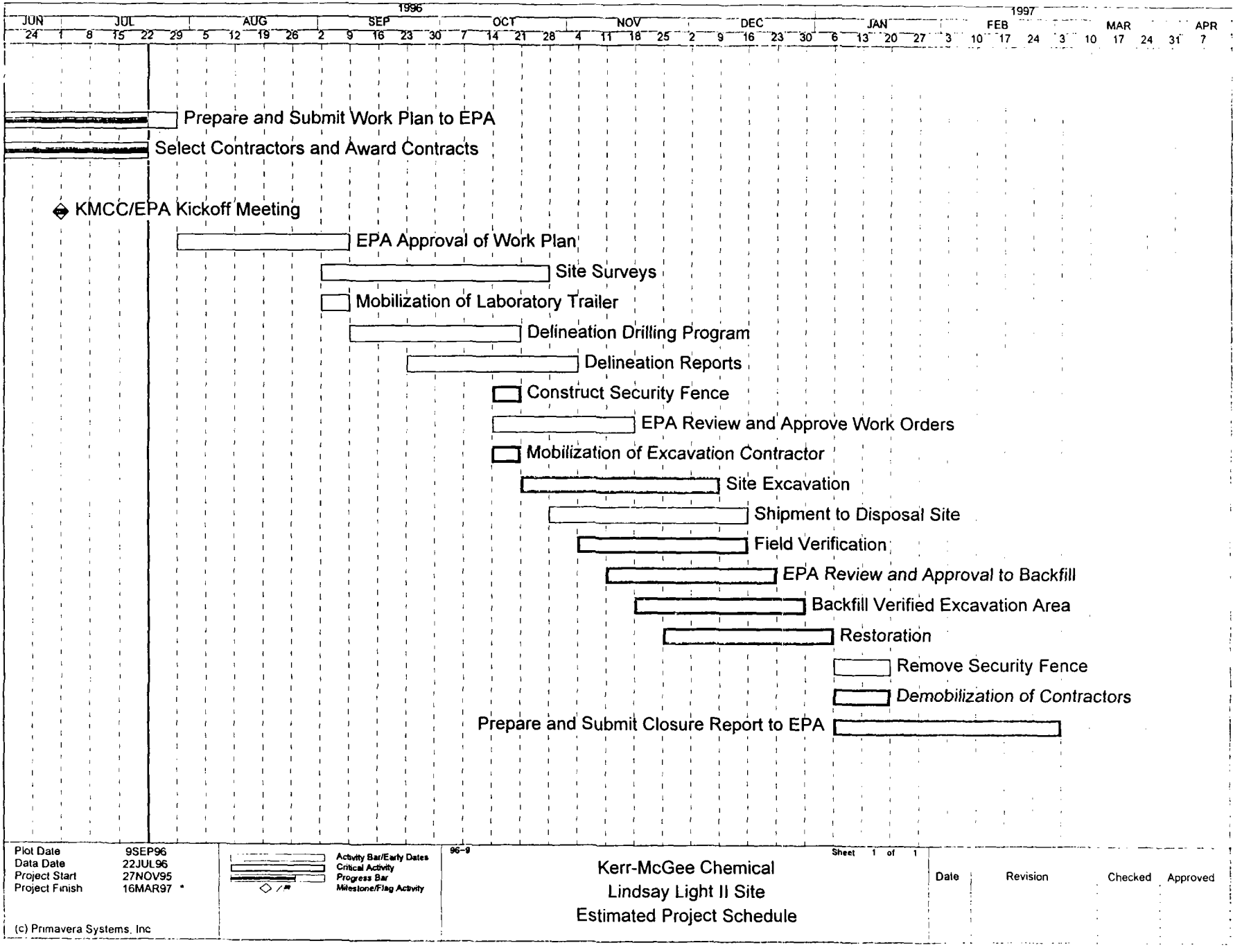
    "...the Chicago Fire Department providing ambulance service. Emergency services can be provided by Northwestern Memorial Hospital **located within one-half mile of the Site**. The location and possible route to the hospital from the Site are shown on Figure 2. Narrative directions are..."

79. Document 500, page 2-3--Change U.S. EPA to (312) 353-2318 and also to an emergency phone number.

    Response: The area code for the telephone numbers for the Offsites Manager was changed from 708 to 630. The contact name was changed from U.S. EPA to U.S. EPA Region V 24-hours Emergency Number and the number was revised as above.

ATTACHMENT FOR COMMENTS 20

Revised Estimated Project Schedule


1996
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APR
24 1 8 15 22 29 5 12 19 26 2 9 16 23 30 7 14 21 28 4 11 18 25 2 9 16 23 30 6 13 20 27 3 10 17 24 3 10 17 24 31 7
Prepare and Submit Work Plan to EPA
Select Contractors and Award Contracts
KMCC/EPA Kickoff Meeting
EPA Approval of Work Plan
Site Surveys
Mobilization of Laboratory Trailer
Delineation Drilling Program
Delineation Reports
Construct Security Fence
EPA Review and Approve Work Orders
Mobilization of Excavation Contractor
Site Excavation
Shipment to Disposal Site
Field Verification
EPA Review and Approval to Backfill
Backfill Verified Excavation Area
Restoration
Remove Security Fence
Demobilization of Contractors
Prepare and Submit Closure Report to EPA
Plot Date 9SEP96
Data Date 22JUL96
Project Start 27NOV95
Project Finish 16MAR97
Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity
96-9
Sheet 1 of 1
Kerr-McGee Chemical
Lindsay Light II Site
Estimated Project Schedule
Date
Revision
Checked
Approved
(c) Primavera Systems, Inc

ATTACHMENT FOR COMMENTS 36 AND 42

Revised Table 1-2 of the QAPP
Data Use and Quality Objective

Table 1-2

Data Use and Quality Objective

Analysis Method	Data Use	Analytical Level
High-Volume Air Monitoring Station (Radiological) [a]	Air Monitoring	3
Laboratory Gamma Spectroscopy [b]	Backfill Confirmation [c] Verification Delineation Drilling Radiological Screening	3

(a) Gross alpha measurements.

(b) Radiological Analysis for Ra-226 and Ra-228 by gamma spectroscopy.

(c) The REF Laboratory will be used for analysis of offsite backfill and the On-Site Laboratory will be used for analysis of on-site backfill.

ATTACHMENT FOR COMMENT 37

Revised Table 3-1 of the QAPP
Summary of Sample and Collection Analysis

Table 3-1

Summary of Sample Collection and Analysis [a]

Purpose	Sample Method	Ra-226 and Ra-228 *Analysis*	Total Suspended Particulates *Analysis*	*Duplicate* (Lab Split) *Samples*
Air Monitoring	High-Volume Air Monitoring Station	(b) (c)	(b)	0
Backfill Sampling (On-site Source)	Soil Sampling	(d)	-	5%
Backfill Sampling (Offsite Source)	Soil Sampling	(d)	-	5%
Verification Sampling	Soil Sampling	(e) (f)	-	5%
Delineation Drilling	Soil Sampling	(f)	-	0

(a) Does not include field QC samples.

(b) A minimum of two samples collected from two separate sampling locations per 8 hour period (one day of operation) per property or work area. Filters will be changed daily. TSP analysis procedures are described in Section 5.3 of the Air Monitoring SOP-212.

(c) Air samples will be tested for gross alpha.

(d) Borrow sampling frequency defined in Field Sampling Plan.

(e) Verification sampling frequency defined in Verification Sampling Plan (Document 106).

(f) Analysis by gamma spectroscopy.

ATTACHMENT FOR COMMENT 38 AND 46

Revised Table 3-4 of the QAPP
Minimum Detection Activities for Th-Alpha (Gross Alpha)
by TSP (Total Suspended Particulates)

Table 3-4

Minimum Detectable Limits for Th-Alpha (Gross-Alpha)

by TSP (Total Solid Particulates)

Air Sample Type	Run Time (mins)	Flow Rate (L/min)	Volume (cc)	Alpha BKGD (counts/min)	Alpha MDA [a] (dpm)	Alpha MDA (µCi/cc)	Th-232 MDA [b] (µCi/cc)
Graseby GMW-2000	10080	1416	1.4E+10	0.3	0.5	4.7E-17	9.4E-18
SAIC AVS-80A	1440	169.9	2.4E+08	0.3	0.5	2.7E-15	5.4E-16
SAIC AVS-60A*	480	198.2	9.5E+07	0.3	0.5	7.0E-15	1.4E-15
Eberline RAS-1	480	45	2.2E+07	0.3	0.5	3.1E-14	6.2E-15

Air Sample Type	Run Time (mins)	Flow Rate (L/min)	Volume (cc)	Alpha BKGD (counts/min)	Alpha MDA (dpm)	Alpha MDA (µCi/cc)	Th-232 MDA [b] (µCi/cc)
MSA Flow-Lite	2400	2	4.8E+06	0.4	0.6	1.6E-13	3.2E-14

(a) MDA calculated per NRC regulations Guide 4.14 assuming samples counted on a gas flow proportional counter with an efficiency of 34.1% and a count time of 30 minutes

(b) The Th-232 decay series contains seven alpha-emitting nuclides: Th-232, Th-228, Ra-224, Ra-220, Po-216, Bi-212, and Po-212. Of these, the first three nuclides can be assumed to be in complete equilibrium. The noble gas Rn-220 (thoron) may be ejected from the original matrix by recoil from the alpha particle decay of Ra-224. The fraction of Rn-220 that is removed via emanation is dependent on several variables, and is assumed to range from 10 to 40%. The emanating fraction is assumed to be transported away from the original matrix. If 40% of the Rn-220 escapes, the activity of the Rn-220 and its three alpha-emitting progeny nuclides will be at 60% of the Th-232 activity. There four alpha-emitting nuclides produce a total of 3.35 alpha emissions per Rn-220 decay. Since the Rn-220 activity is 6-% of the Th-232 activity, these four nuclides only emit the equivalent of two alpha particles per Th-232 decay. These two alphas when combined with the three alpha particles from the nuclides in full equilibrium with the parent, result in the total emission of the five alpha particles. Thus, the Th-232 contribution will be one-fifth or 20% of the total alpha activity.

ATTACHMENT FOR COMMENT 39 AND 47

Revised Table 3-5 of the QAPP
Minimum Detectable Activities for Gamma Spectroscopy

Table 3-5

Minimum Detectable Activities for Gamma Spectroscopy

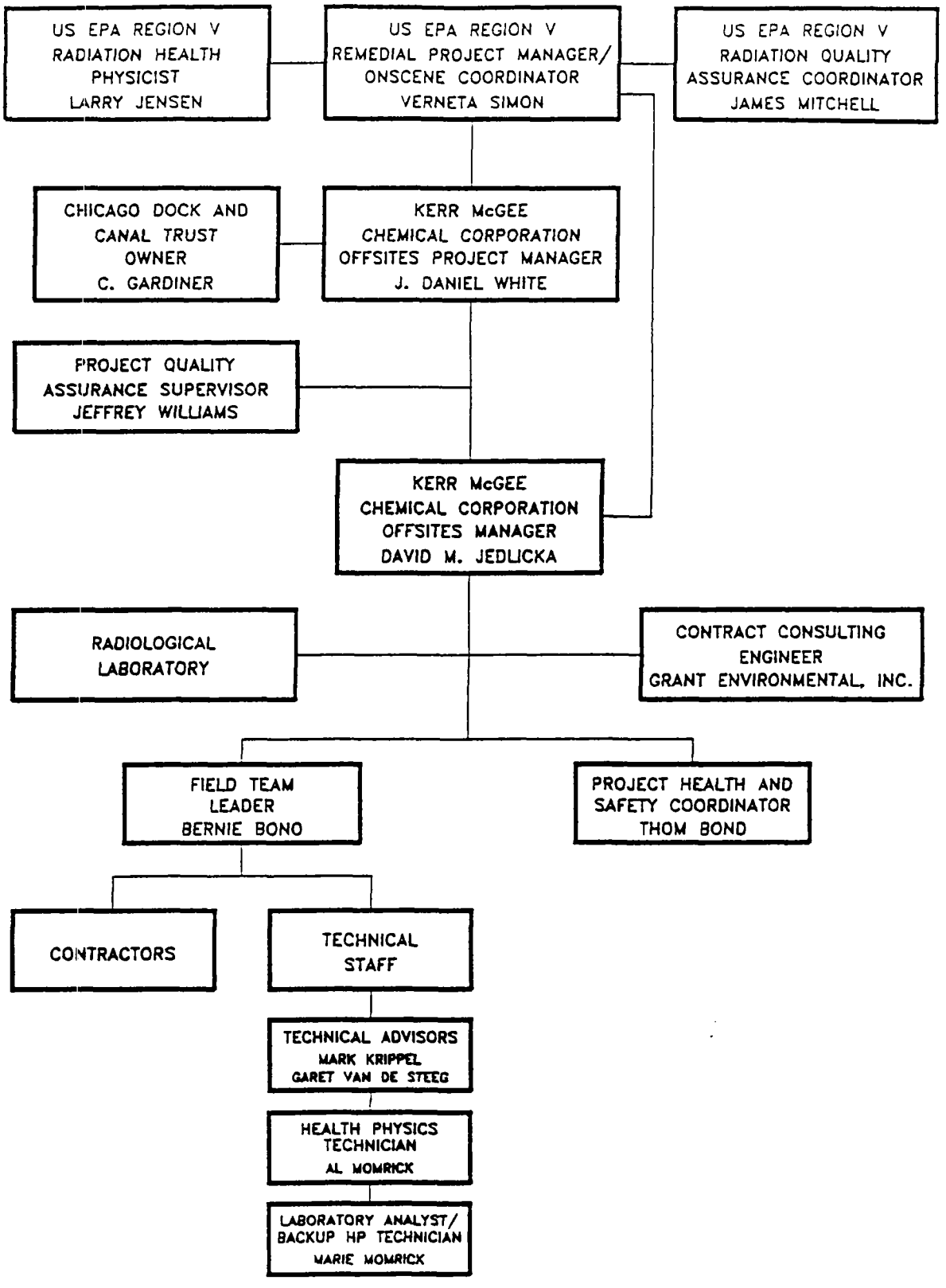
Nuclide	MDA, uCi	TSP Volume, ml	MDA, uCi/ml
Pb-210	4.0E-05	9.5E+07	4.2E-13
Pb-212	2.0E-06	9.5E+07	2.1E-14
Pb-214	3.7E-06	9.5E+07	3.9E-14
Bi-212	3.0E-05	9.5E+07	3.2E-13
Bi-214	4.4E-06	9.5E+07	4.6E-14
Ac-228	1.1E-05	9.5E+07	1.2E-13
Th-234	1.1E-05	9.5E+07	1.2E-13
Pa-234m	8.6E-04	9.5E+07	9.1E-12

The Rare Earths Facility Laboratory's operating conditions are:

Air filter counted on 25 % efficiency HPGe detector inside a low background shield.
Sample in poly bag placed directly on top of cryostat.
Counting time of 2.16E+04 seconds (360 minutes or 6 hours).
Data processed using Canberra Procount software.
Minimum Detectable Activity per US-NRC Regulatory Guide 4.14 @ 4.65 times the standard deviation of the instrument background.

ATTACHMENT FOR COMMENTS 44 and 65

Revised Figure 2-1 of the QAPP and CQA Plan
Project Organization Chart



5022

5022\112 POC DWG. 9/6/96

GRANT ENVIRONMENTAL
consulting and engineering
DENVER, COLORADO

FIGURE 2-1
PROJECT ORGANIZATION CHART
LINDSAY LIGHT II SITE
CHICAGO, ILLINOIS

ATTACHMENT FOR COMMENT 72

Revised Table 7-1 of the Health and Safety Plan
Action Levels as Determined by Radioactivity

TABLE 7-1

ACTION LEVELS AS DETERMINED BY RADIOACTIVITY

Note: Personnel shall not be exposed to airborne radioactivity such that their weekly intake exceeds 12 Derived Air Concentration (DAC)-hours without prior approval of the Field Team Leader or designee.

Level of protection may be increased to Level C (full-face air purifying respirator) when airborne monitoring indicates that contamination levels have reached 30% of the DAC. All assessments shall incorporate ALARA principles. Engineering controls shall be used prior to assignment of respiratory protective equipment.

Signs shall be posted at entrances to areas where airborne radioactivity levels exceed, or have the potential to exceed, 25% of the DAC.

Radiation Type	Action Level	Level of Respiratory Protection/Action
a. Contamination on smear samples	250 pCi/100 cm^2 gross alpha[a]	Consider modified Level C (full- face APR) based upon ALARA evaluation.
b. Airborne Radioactivity	30% DAC[b]	Consider Level C (full-face APR) based upon ALARA evaluation. Ensure proper posting. Consider internal monitoring
c. Ambient Gamma (work areas)	5 mrem/hr[c]	Consider procedures for shielding of soils. Ensure proper posting.
d. Ambient Gamma (off-site areas)	2 mrem/hr[d]	Implement immediate controls to reduce dose equivalent rate.

Notes

(a) Approximately 3 times the unrestricted release criteria in the NRC Regulatory Guide 1.86

(b) Potential Airborne Radioactivity Area as defined in 10 CFR 20

(c) The ambient gamma dose equivalent rate action level of 5 mrem/hr stems, from the 10 CFR 20 radiation area definition.

(d) The ambient gamma action level for off-site is based upon the 10 CFR 20 requirements to maintain dose equivalent rates in unrestricted areas such that they do not exceed 0.002 rem in any one hour.

ATTACHMENTS FOR COMMENT 76

Figure 1.1 of the Health and Safety Plan
Visitor Information Sheet

Figure 3.1 of the Health and Safety Plan
Impacted Areas of Lindsay Light II Site

Figure 1.1

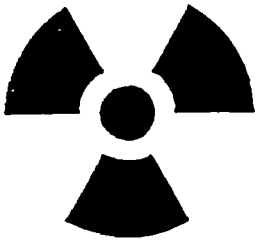
KERR-McGEE CHEMICAL CORPORATION

LINDSAY LIGHT II SITE

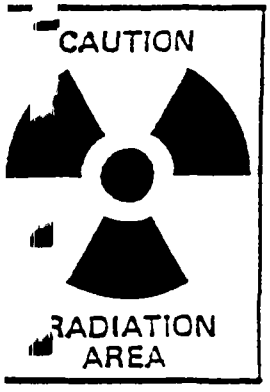
KM- 92

VISITOR INFORMATION

NOTICE TO VISITOR: ALL VISITORS MUST BE ESCORTED AT ALL TIMES WHILE ON THIS SITE.

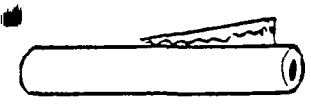


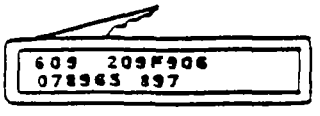
CAUTON. Radioactive materials are present on this site. Radioactive materials may be found throughout the site. Grounds, buildings and equipment have low levels of contamination.



CONTROLLED AREAS: Do not enter areas with these signs unless you have an escort or health physics has given specific approval and you understand access limitations.

You must wear protective clothing in controlled areas. Health physics will provide you with instructions.



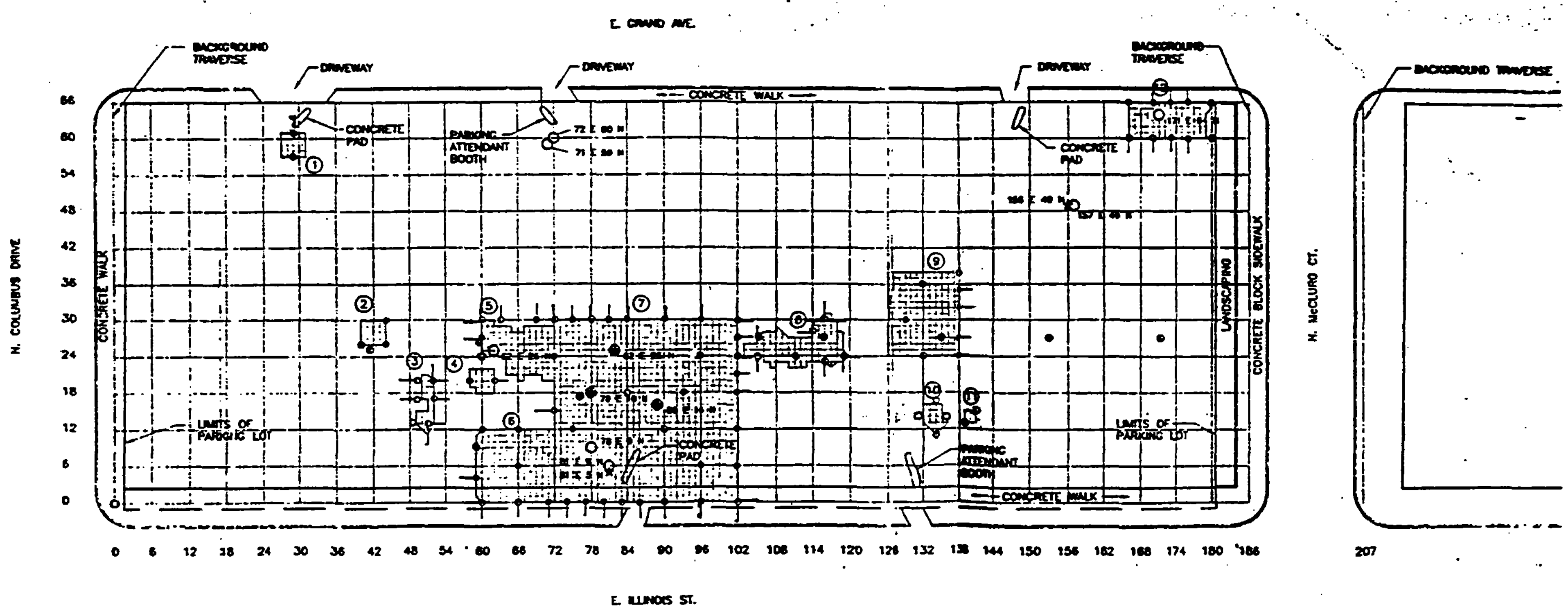


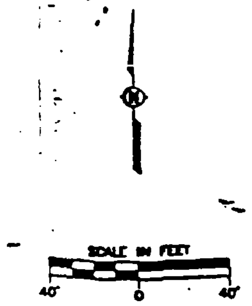
You must wear a personal radiation dosimeter if you enter an area which is controlled.

No smoking, eating, drinking or chewing in controlled areas.
NO EXCEPTIONS.

You may request to see radioactive materials license for this facility as granted by the USNRC.
Notify Health Physics if you do not understand these instructions.

TIME DATE





LEGEND

- 6 METER OVERLAND GAMMA SURVEY GRID
- ⑫ 1 METER OVERLAND GAMMA SURVEY GRID (AREA REFERENCE NO.)
- ○ 81 E 6 N — CPT DOWN-HOLE GAMMA SURVEY (WITH STATION REFERENCE)
- ★ 81 E 6 N — SOIL SAMPLE LOCATION (WITH STATION REFERENCE)
- ● CATCH BASINS
- o STARTING BORING LOCATION (DELINEATION PROGRAM)
- — TANSECT

REVISION NO.	DESCRIPTION	DATE	BY
1	RESPONSE TO USEPA COMMENTS	7-15-94	RCD

DRAWN BY	GRS	DATE 7-18-94
CHECKED BY	ROB	DATE 7-18-94
APPROVED BY	ROB	DATE 7-18-94
CADFILE J:\CROSSDWG\27313\27313ZH\27313ZH2.DWG 1:40		

GAMMA RADIATION SURVEY
SHOWING ELEVATED GAMMA AREAS DOWN-HOLE
LOG LOCATIONS AND SOIL SAMPLE LOCATIONS

LINDSAY LIGHT II
318 E. ILLINIOS ST.
CHICAGO, ILLINOIS

STS Consultants Ltd.
Consulting Engineers

STS PROJECT NUMBER 27313-ZH
STS PROJECT FILE 27313ZH2
SCALE 1"=40